

1 Q. Uh-huh.

2 A. So, 1.99 -- which is engineering terms,
3 ROW -- ROW over 2, area times velocity
4 squared. Force equals some coefficient.
5 ROW over 2, area times velocity squared,
6 that will give you a force.

7 So, if we look at this -- and
8 this gives you a force in pounds.

9 Q. And you've got to go slow for me. The
10 force that we're talking about is the
11 force of the current?

12 A. Force of the current on the stern of the
13 vessel.

14 Q. Okay.

15 A. Force of the current on the stern of the
16 vessel, some coefficient, ROW over 2. ROW
17 being 1.99, which is 64 pounds of cubic
18 foot salt water. Remember, fresh water
19 is 62.4; salt water is about 1.28 times
20 heavy; 64 pounds per cubic foot, feet,
21 and divided by 32. The area, 5 by 2,
22 makes it real easy; 10 square feet on the
23 stern of the vessel.

24 And then the velocity --

1 remember, we talked about 6 knots. Six
2 knots equates to 10 feet per second,
3 roughly. Multiply 6 times 1.69, and you
4 come out with about 10 feet per second.

5 And 10 by 10 by 10, three tens,
6 area, velocity squared; it's about 1,000
7 times 1.99 over 2; it's about a one. And
8 the coefficient, easy one to use is one.
9 You can get above one, or you can get
10 below one, depending upon the exact shape
11 of the transom. I don't know what that
12 is.

13 So, for good numbers, the force
14 is about 1,000 pounds. A thousand pounds
15 pushing on the stern of the vessel. And
16 a 40 horsepower motor cannot produce
17 1,000 in reverse.

18 Q. How do you determine the amount of force
19 that the motor can --

20 A. Well, I have to use again, little
21 analogies. I know what it is on tugs.
22 Big numbers on tugs, 25 pounds per
23 horsepower; big numbers. Remember, big
24 propellers.

1 Q. Right.

2 A. And this is a little propeller. And it's
3 not built, really, for thrusting. It's
4 built for something else, generally a
5 higher speed operation. So, I would say
6 under any circumstances, we're not going
7 to get more than 20 pounds of horsepower
8 out of it.

9 Q. Is there a way that you can determine
10 specifically -- is force the right term?

11 A. Yeah, force.

12 Q. That the engine's capable of providing?

13 A. Sure. I need to know something about the
14 propeller --

15 Q. Does the manufacturer provide that kind
16 of --

17 A. No, I'd have to know more about the
18 engine and the propeller. And I don't
19 know that.

20 Q. Okay.

21 A. If I saw the engine and the propeller, I
22 could do a calculation on it. I don't
23 have the engine. I don't know the size
24 of the propeller. I don't know who could

1 give me that.

2 Q. And these aren't things that the
3 manufacturer just puts out?

4 A. Yeah, but I'd have to know something
5 about what propeller was on that vessel
6 -- that particular engine. I don't know
7 that. All I'd need to do is see the
8 engine. I could do a calculation on all
9 this. But, it doesn't make any
10 difference. All I'd have to do is find
11 out whether or not this engine is capable
12 of pushing or pulling this engine --
13 vessel -- against 1,000 pounds.

14 we're dealing with something
15 going in the reverse. And engines are
16 not as efficient when going in reverse,
17 compared to going forward. So, there's
18 no way, in my opinion, that this little
19 40 horsepower engine is going to produce
20 1,000 thrust.

21 So, I therefore say it's
22 incapable of maneuvering that little boat
23 under those conditions.

24 Q. Let me just go through this slowly,

1 because I want to understand it.

2 A. Sure.

3 Q. If the vessel's capable of backing up --
4 and I think you said before that it got
5 pushed around. But, if it's capable of
6 backing up into the current, isn't it by
7 definition exerting more force than the
8 force that's being exerted against it?

9 A. Absolutely, sure.

10 Q. And if your calculation was that it was
11 1,000 pounds against it, but it's able to
12 back up into the current, then the motor
13 is producing 1,000 pounds?

14 A. Sure, yes. Or my 1,000 pound calculation
15 is in error, or the current force is in
16 error.

17 Q. Okay, all these variables.

18 A. Sure. Exactly.

19 Q. And we don't know what any of these
20 variables are for the purposes of our
21 discussion right here, do we? We don't
22 know the current.

23 A. Well, I have some indication of what the
24 current is. No one went down and

1 measured it.

2 Q. Right. And we don't know the
3 configuration of the stern, specifically.

4 A. Right. I have photographs of the stern,
5 but nothing specific.

6 Q. I mean, if you went down there you'd do
7 measurements first?

8 A. I would find out what the draft of the
9 vessel is, yes.

10 Q. Okay, and just for a lay juror or a judge
11 that may be reading this, can you tell us
12 what the draft is?

13 A. Yeah, I have to calculate testimony that
14 the draft is 2 to 2 1/2 feet. And the
15 freeboard is a foot.

16 Q. So we can define our terms, draft is?

17 A. Distance from the water line down to the
18 bottom of the vessel.

19 Q. And the freeboard is?

20 A. The water line to the side of the vessel
21 rail, the rail. So we add them both
22 together, and we come out with 3 and 3
23 1/2 feet. And I think that comes from
24 Mr. Ramsey's statement right after the

1 casualty. In fact, let me pull that out
2 and make certain my memory is not failing
3 me. [Looking through documents.] No,
4 sorry about that. She draws 2 1/2 to 3
5 feet of water.

6 So, 2 1/2 and it has a freeboard
7 of 1 foot. So, 2 1/2 to 3 feet makes it
8 3 1/2 to 4 feet on the side.

9 Q. Okay.

10 A. So, when I say 10 square feet at the
11 stern, it actually could be larger than
12 10 square feet. When I say 10, 5 feet by
13 2 feet, it could actually be 5 feet by 3
14 feet, which is 15 square feet.

15 Q. Let me ask you to pin down for me what
16 role you think the fact that the engine
17 may have been undersized had to do with
18 causing the casualty. Because he was
19 certainly able to back up -- well, let me
20 not put words in your mouth --

21 A. No, he wasn't able to back up.

22 Q. Tell me, tell me.

23 A. Because he got broadsided. In other
24 words, his port side got into the rake.

1 He wasn't able to back out.

2 Q. Well, is it your understanding that the
3 motor hadn't stalled at that point?

4 A. When the motor stalled, I don't know.
5 But, in any event, all I know is he got
6 port side, --

7 Q. No, no, but if he's --

8 A. He's trying to get back out. And I think
9 his testimony is, his bow is to the stern
10 of the barge, that is, the dredge.

11 Q. Uh-huh.

12 A. And that's all I hear. And I don't hear
13 that he got away from it, that he
14 actually backed out.

15 Q. This is right before it sunk, you mean?

16 A. Yes, yeah. Let's go through the
17 testimony again.

18 Q. Okay, go ahead.

19 A. He comes in and he actually floats in,
20 originally. Remember, the current is
21 bringing him in.

22 Q. That's right.

23 A. They give him a line, and he ties up at
24 that point.

1 Q. Right.

2 A. And at that point, depending upon which
3 story -- somebody says, "*Get around to*
4 *the other side,*" and someone says, "*well,*
5 *I never said that.*" But, in any event,
6 he decides to get the thing started
7 again, to bring it around to the other
8 side. And he's fooling around with it a
9 little bit. And someone else was helping
10 him. And then they left and he fooled
11 around with it a little bit more. And he
12 finally got it started. And at that
13 point, he wanted to back out. And
14 remember, a couple of wires are crossing.
15 He has to back out.

16 And I don't know at what point,
17 but he says he got the vessel turned
18 around such that his bow is facing the
19 stern of the dredge.

20 Q. Where he's leaving from, right?

21 A. Right. And at that point, something
22 happens and he swings around to port and
23 gets trapped under the rake of the other
24 barge.

1 Q. Okay.

2 A. And I don't know how far he got away.

3 Q. Let me ask you this question -- continue.

4 A. As soon as he got trapped, that's the end
5 of the story.

6 Q. Okay, and the engine being undersized
7 goes to him not being able to get away
8 from the rake --

9 A. Right, right.

10 Q. -- of the other barge?

11 A. Right, or do any maneuvering with it.

12 Q. Okay, if we assume, hypothetically, that
13 the engine had stalled prior to him
14 impacting the rake of the other barge, --

15 A. The first time or the second time, now?
16 Did he get away or not get away?

17 Q. Well, we know he didn't get away, right?

18 A. Right, we know he didn't get away.

19 Q. And the boat, the skiff, started to
20 capsize.

21 A. No, it twisted around. Remember, he's
22 headed -- the bow of his vessel is pushed
23 against the stern of the dredge. And
24 then it swings around such that his port

1 side goes under the rake of the other
2 barge. It rotates.

3 Q. Okay.

4 A. And then the --

5 Q. Well, let's --

6 A. -- forces of current pushed the starboard
7 side down, his port side goes up the
8 rake.

9 Q. And you mentioned he couldn't get away
10 from the rake of the barge.

11 A. Right.

12 Q. If we assume at the point that the skiff
13 impacted the rake of the barge, if we
14 assume that the motor had stalled at that
15 point, whether or not it's undersized had
16 nothing to do with this incident.

17 A. No.

18 Q. I just want to make sure there's no
19 other --

20 A. Once he stalled and he couldn't get it
21 started again, he's trapped.

22 Q. Okay.

23 A. And even if he got it started again, I
24 don't think he could have gotten away

1 from the rake. He was caught under that.

2 Q. Have you formed any other opinions that
3 you intend to testify to that aren't
4 contained in this report?

5 A. There's another one that I picked up.
6 And it has to do with the lack of radio
7 communication. And that comes about in
8 the statement, page 17, *"where there any*
9 *problems with the radio?"* And he says,
10 *"Yeah, the radios were not working. We*
11 *couldn't contact each other. The only*
12 *radio that worked was my own personal*
13 *handheld radio."* In this day of modern
14 communications, just about everyone --
15 and certainly on the river, and I'd like
16 to believe on these construction jobs --
17 has a radio so that they can talk to each
18 other.

19 Q. A handheld radio?

20 A. Handheld radio. And he's just indicating
21 they weren't working.

22 Q. These are the handheld radios?

23 A. I assume, or one can assume that.

24 Q. Most skiffs and outboard motors don't

1 have -- the skiff that we're talking
2 about, most of them aren't equipped with
3 radios.

4 A. Oh, no, no. It would be something you
5 hand held or put on your belt, or
6 something.

7 Q. You're not a radio expert?

8 A. No, all I say is that in my opinion when
9 you're working on these commercial
10 ventures, everyone stays in contact with
11 everyone else.

12 Q. Do you have any understanding that a lack
13 of a radio caused or contributed to the
14 incident?

15 A. No, I'm just saying that these were all
16 surrounding -- is there a contribution?
17 Possibly somewhere, due to lack of
18 communication. But outside of that, I
19 don't know what to say about it. It's
20 basically stalling, in other words, the
21 vessel having an engine that's
22 unseaworthy, or the vessel's unseaworthy
23 because of a lack of a proper engine.

24 Q. Okay, now --

1 A. And then we have something with the
2 vessel being unseaworthy because it's
3 underpowered for operating in those
4 environmental conditions.

5 Q. It's fair to say that a well-maintained
6 engine can stall under certain
7 circumstances?

8 A. Sure, you run out of fuel.

9 Q. Other reasons, too? I mean, we've all
10 broken down in our cars, and --

11 A. Yeah, but a lot of the breaking down in
12 cars has to do with lack of maintenance,
13 for example. If a fuel filter is torn,
14 that's a lack of maintenance.

15 Q. Okay, you maintain your car well? I
16 trust you do? Give yourself an A for car
17 maintenance? Have you ever broken down?

18 A. No, not since I've been 17, --

19 Q. Really?

20 A. -- when I ran out of fuel. Never again
21 did I ever run out of fuel. My car has
22 never stalled. I don't have that
23 personal experience, except when I was 17
24 and ran out of fuel. Never again.

1 Q. But you accept as a general proposition,
2 don't you, that a person who regularly
3 takes their car in, by the book, for
4 maintenance, can still run into a
5 problem?

6 A. Oh, absolutely you can run into a
7 problem. I know, personal experience in
8 my family, that these fan belts fail.
9 Actually, it was a timing belt on a
10 foreign car. And they're supposed to be
11 changed at 75,000 miles. At 30,000
12 miles, this thing broke on the road, and
13 the engine just stopped on a thruway. We
14 did not buy foreign cars of that
15 manufacturer thereafter.

16 But, in any event, yes, certainly
17 it can happen. But, remember, that gave
18 no warning or anything else. This
19 [indicating] gave warning. People knew
20 about the problem before it actually led
21 to a serious accident. This breaking of
22 a timing belt gave no warning,
23 absolutely. And the manufacturer said,
24 *"Don't worry about it until you get*

1 *70,000 miles on it."*

2 This is not that situation. This
3 is a situation where it's open and
4 obvious there's a problem. Fix it.

5 Q. Have you formed any other opinions? And,
6 you know, I just don't want to be
7 surprised.

8 A. No, I don't intend -- I try to write
9 everything in my report the first time.

10 Q. I appreciate that.

11 A. And give full disclosure and use my file.
12 And I think it's relatively simple what's
13 going on here; improper repair and
14 operating a vessel with this engine in
15 swift currents of the Barnegat Bay Inlet.
16 And knowing about the problem with the
17 engine, and not doing anything about it,
18 and then having an undersized engine for
19 this particular boat.

20 And that's the story here. The
21 little thing about the radio, it's just
22 another thing that was not operating
23 properly that adds to the unseaworthiness
24 condition that existed on this vessel.

1 But did that cause the actual
2 casualty, or contribute to it? Perhaps
3 in a minor matter.

4 Q. Have you been asked to form any further
5 opinions? Do you anticipate --

6 A. Well, I haven't read any of the log
7 books, nor the massive documents that
8 were provided this morning. I don't know
9 whether there's anything in those or not.
10 But, I have not reviewed them.

11 Q. So, it's fair to say as you sit here
12 right now, no one's asked you --

13 A. No one's asked me to do anything further,
14 except, I think, certainly Mr. Rosenthal
15 was talking to me in terms of reviewing
16 the log books.

17 Q. Okay.

18 A. But, I am not interested in reviewing
19 financial records or things like that,
20 which I understand were also provided.

21 MR. ROSENTHAL: Not many.

22 THE WITNESS: Oh.

23 MR. ROSENTHAL: I mean,
24 basically, it's the labor log and the log

1 book.

2 Q. I think we're winding down. Is there
3 anything you want to add or you think we
4 ought to know?

5 A. I try to keep it simple; no.

6 MR. MURPHY: I'm just going to
7 take one second to check on something out
8 there.

9 MR. ROSENTHAL: Sure.

10 MR. MURPHY: I'll be right back.

11 *(Recess 10:25 a.m. - 10:30 a.m.)*

12 Q. You're testifying in this case as a naval
13 architect.

14 A. Correct.

15 Q. And I understand your previous testimony
16 that you're a designer of vessels and
17 that sort of thing.

18 A. Yes.

19 Q. I want to hone in more on your experience
20 with outboard motors. As a naval
21 architect, you don't design outboard
22 motors, do you?

23 A. I do not design outboard motors.

24 Q. And have you ever worked in the

1 maintenance and repair of outboard
2 motors?

3 A. Only my own outboard motors.

4 Q. So you've never done that professionally?

5 A. No.

6 Q. And do you have any training regarding
7 the maintenance and repair of outboard
8 motors?

9 A. Only to the extent that I'm involved with
10 them in other cases, and one has to be
11 familiar with the particular outboard
12 motor. At that point, it's generally
13 investigating the motor by seeing it,
14 hands-on with the motor, taking things
15 apart on the motor, having the
16 manufacturer's instructions on the motor
17 and maintenance on the motor.

18 Q. You mention that you've owned outboard
19 motors.

20 A. Oh, yeah.

21 Q. What's that history?

22 A. Well, Evinrudes, I've had when I was
23 younger. I don't have them right now.

24 Q. How many, when?